

A Marine Harpacticoid, *Lourinia armata* (Claus, 1866) New to Korea (Crustacea: Copepoda)

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海産 하르팍티쿠스目 1未記錄種, *Lourinia armata* (Claus, 1866)
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적 요

海産 하르팍티쿠스目的 橈脚類는 지금까지 우리나라에서 12種이 기록되어 있을 뿐이다. 한국의 해산 하르팍티쿠스目 요각류의 分類를 연구하기 위하여 한국산 海藻類를 조사한 결과 1992년 6월과 8월에 각각 동해안의 남해와 제주항에서 *Lourinia armata*(Claus, 1866)가 채집되었다. 이 종은 동북아 연안에서 최초로 보고되는 것이며, 이에 한국산 未記錄種으로 재기재하고 도판을 작성하였다.

Key words: Copepoda, Harpacticoida, Louriniidae, *Lourinia armata*, Korea

INTRODUCTION

More than 2,800 species of harpacticoid copepods were reported from various habitats of the world ocean (Bodin, 1988). However, only 12 species were reported in Korean waters. Among them, three species were described and figured (Yeatman, 1983; Ho and Hong, 1988).

The genus *Lourinia* includes two species and three forms (Bodin, 1988). *Lourinia nicobarica* was recorded only by Sewell (1940). *Lourinia armata* was first recorded by Claus (1866) and then

followed other reports and redescrptions, viz., Thompson and Scott (1903), Nicholls (1941), Noodt (1955), Petkovski (1955), Pesta (1959), and Vervoort (1964). Its earlier name *Jurinia* was renamed as *Lourinia* by Wilson (1924), since the genus name *Jurinia* was preoccupied by Desvalles (cf. Wilson, 1924) for a genus of Diptera. Sewell (1940) divided *L. armata* into two forms, *major* and *minor*. In 1954, Jacobi added another form, *L. armata sulamericana*. *L. armata* showed somewhat polymorphism, especially in setal formula and furcal seta. Vervoort (1964) regarded that these forms were not valuable, since their variabilities were probably less wide than these previously published.

In the northwestern Pacific, *Lourinia armata* has not yet reported. The authors examined macroalgae and netting samples from 40 stations in Korean waters. As a result, we found *L. armata* in the samples from Cheju Island and Namae off the east coast. We report this species from Korean waters on the basis of these specimens.

MATERIALS AND METHODS

The specimens examined were collected by washing macroalgae and by hauling plankton nets at Namae off the east coast in June and Cheju Island in August, 1992. Specimens were fixed with neutral formalin and preserved with 70% ethanol. Dissection and measurement were carried out with specimens soaked in lactic acid. All figures were drawn with the aid of a camera lucida. The specimens were deposited in the Department of Biology, Hanyang University, Seoul.

DESCRIPTIONS

Order Harpacticoida

Family Louriniidae

Genus *Lourinia* Wilson, 1924

***Lourinia armata* (Claus, 1866) (Figs. 1-4)**

Jurinia armata Claus, 1866 (p. 25, pl. 2, figs. 15-24)

Ceylonia aculeata Thompson and A. Scott, 1903 (p. 265, pl. 7, figs. 11-23)

Ceyloniella armata: Sewell, 1940 (p. 124); Nicholls, 1941 (p. 424, fig. 24)

Ceyloniella armata f. *major* Sewell, 1940 (p. 329, figs. 77-78)

Ceyloniella armata f. *minor* Sewell, 1940 (p. 331, fig. 79)

Lourinia armata: Lang, 1948 (p. 1215, fig. 490); Noodt, 1955 (p. 212, fig. 24); Petkovski, 1955 (p. 100, fig. 70); Vervoort, 1964 (p. 304, figs. 120-124)

Lourinia armata sulamericana, Jakobi, 1954 (p. 192, pl. III, figs. 1-17)

Materials. 2 ♀ ♀, 1 ♂, Jun. 1, 1992, at Namae (37°55' N, 128°47' E) off the east coast of Korea collected by W. Lee; 2 ♀ ♀, 2 ♂ ♂, Aug. 3, 1992, at Cheju harbor (33°30' N, 126°30' E) collected by W. Lee.

Female. Body length 0.75-0.95 mm. Body cylindrical (Fig. 1A). Length of apical seta of furcal ramus 0.43 mm (Fig. 1B). Greatest width of body 0.20 mm. Ratio of prosome as follows:

Head + Th1 : Th2 : Th3 : Th4 : Th5

44 : 16 : 10 : 16 : 14 = 100

Color light purple. Rostrum (Fig. 1C) smooth and board with 2 small apical spine. Ratio of urosome as follows:

Gen : Abd2 : Abd3 : Abd4 : Furcal ramus

26 : 18 : 24 : 20 : 12 = 100

Furcal ramus (Fig. 1B) cylindrical, about 1.5 times longer than wide. Furcal ramus with 1 appendicular seta and 5 marginal setae. One of marginal setae depressed dorsoventrally. Ventral posterior parts of anal somite with 1 row of spinules.

Antennule (Fig. 1D) 7-segmented. Ratio of length of each segments as follows:

1st : 2nd : 3rd : 4th : 5th : 6th : 7th

28 : 16 : 16 : 12 : 4 : 6 : 18 = 100

First and fifth segments without setae. Fourth segment with 1 aesthetasc.

Antenna (Fig. 1E) short and powerful. Coxa with 1 external seta. Allobasis short with 1 short and thick internal knob in middle of segment. Exopod small with 2 setae. Endopod composed of single short segment, with 6 strong spines and many small spinules.

Mandible (Fig. 1F) well developed. Gnathobase with smooth 5 teeth and 1 seta. Basis and endopod fused, with 3 setae. Exopod with 4 setae. Arthrite of maxillule (Fig. 1G) with 5 sharp teeth. Coxa and Basis of maxillule fused, with 7 setae. Maxilla (Fig. 1H) with 1 large claw on basis. Claw with 1 seta in middle. 2 endites of maxilla with 2 and 3 short setae, respectively. Posterior margin of maxilla with 1 row of long spinules. Maxilliped with 1 seta and 1 small lobe fused with coxa and basis.

Thoracic legs 1-4 composed of 2 endopods and 3 exopods, respectively. Basis of leg 1 with 1 stout-short spine on inner margin, 1 seta on outer margin and 1 row of spinules near outer seta. First endopodal segment of leg 1 (Fig. 2A) with 1 brush-shaped seta. Second segment of endopod with 1 strong spine on distal end, 1 brush-shaped seta and 1 thin seta on lateral margin. Each exopodal segment of leg 1 with setae and spines, 1, 1, 4, respectively. Third exopodal segments of leg 1 with 2 spines and 2 setae.

Ornamentation of legs 2 - 4 as follows:

	basis	endopod	exopod
Leg 2	1-0	0-1; I,1,3	I-0; I-1; III,2,1
Leg 3	1-0	0-1; I,2,3	I-0; I-1; III,2,1
Leg 4	1-0	0-1; I,2,1	I-0; I-1; III,2,1

First endopodal segment of leg 2 (Fig. 2A) with 1 small brush-shaped seta. Second endopodal segment of leg 2 (Fig. 2B) with 2 brush-shaped setae, 2 plumose setae and 1 spine, also furnished with 3 small spinules on outer lateral margin. First endopodal segment of leg 3 (Fig. 2C) with 1 brush-shaped seta. Second endopodal segment of leg 3 with 1 brush-shaped spine, 4 plumose setae and 1 spine. Second endopodal segment of leg 4 (Fig. 2D) with 1 brush-shaped seta, 2 plumose setae and 1 spine. Length of second endopodal segment short. Both sides of basoendopod of leg 5 fused (Fig. 2E), each side with 4 setae and 2 haired spines. Exopod spatulate, ovoid, slightly longer than wide, reaching slightly beyond basoendopod, with 5 marginal setae. Exopod and basoendopod with canaliculated structure (cf. Vervoort, 1964). External lobe lengthened, with fine seta.

Male. Body lengths 0.83-0.95 mm, body shape (Fig. 2F) similar to female, cylindrical. Endopod of

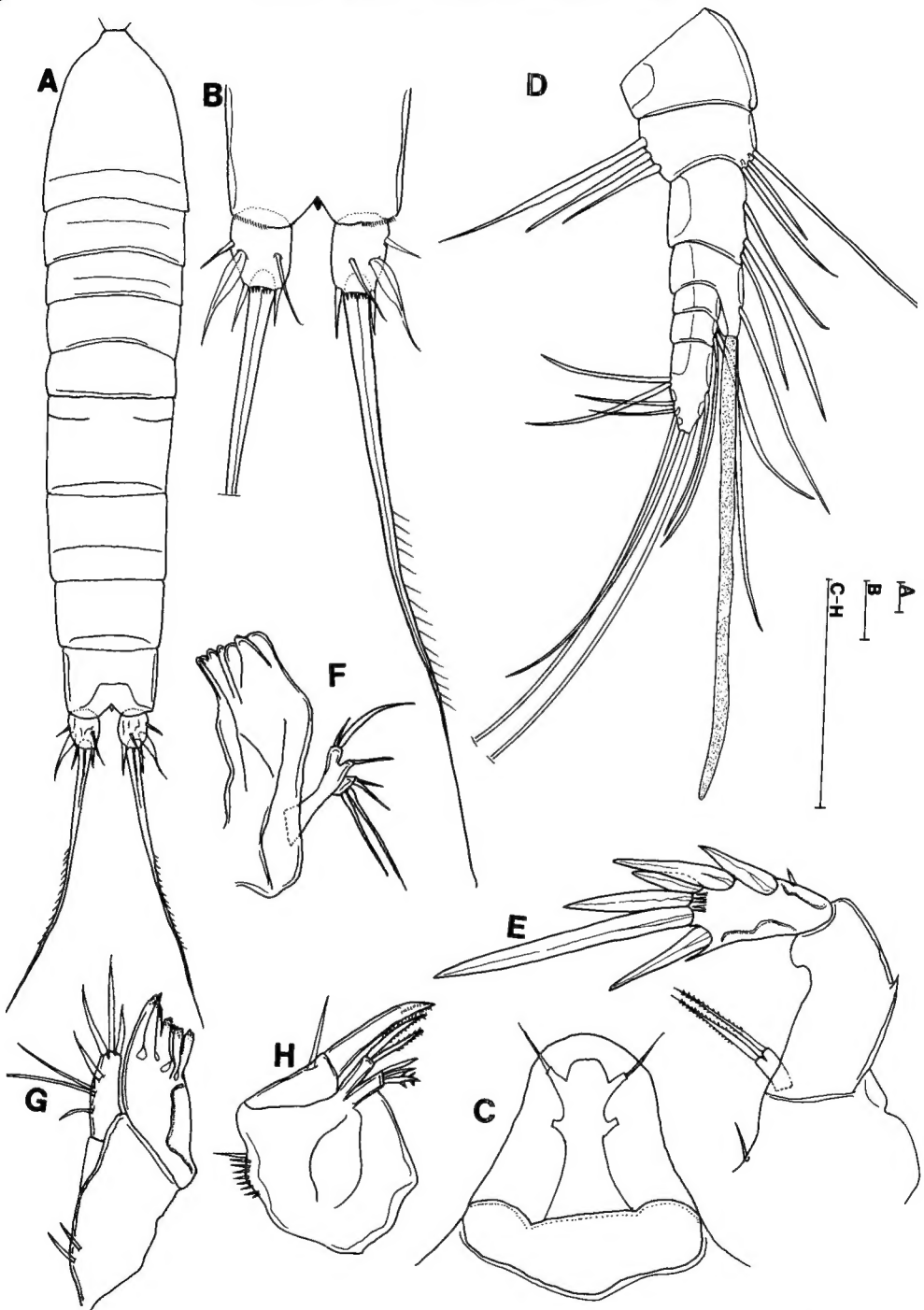


Fig. 1. *Lourinia armata* (Claus), female, A, habitus, dorsal; B, furcal rami, ventral; C, rostrum; D, antennule; E, antenna; F, mandible; G, maxillule; H, maxilla (Scale bars represent 0.1 mm).

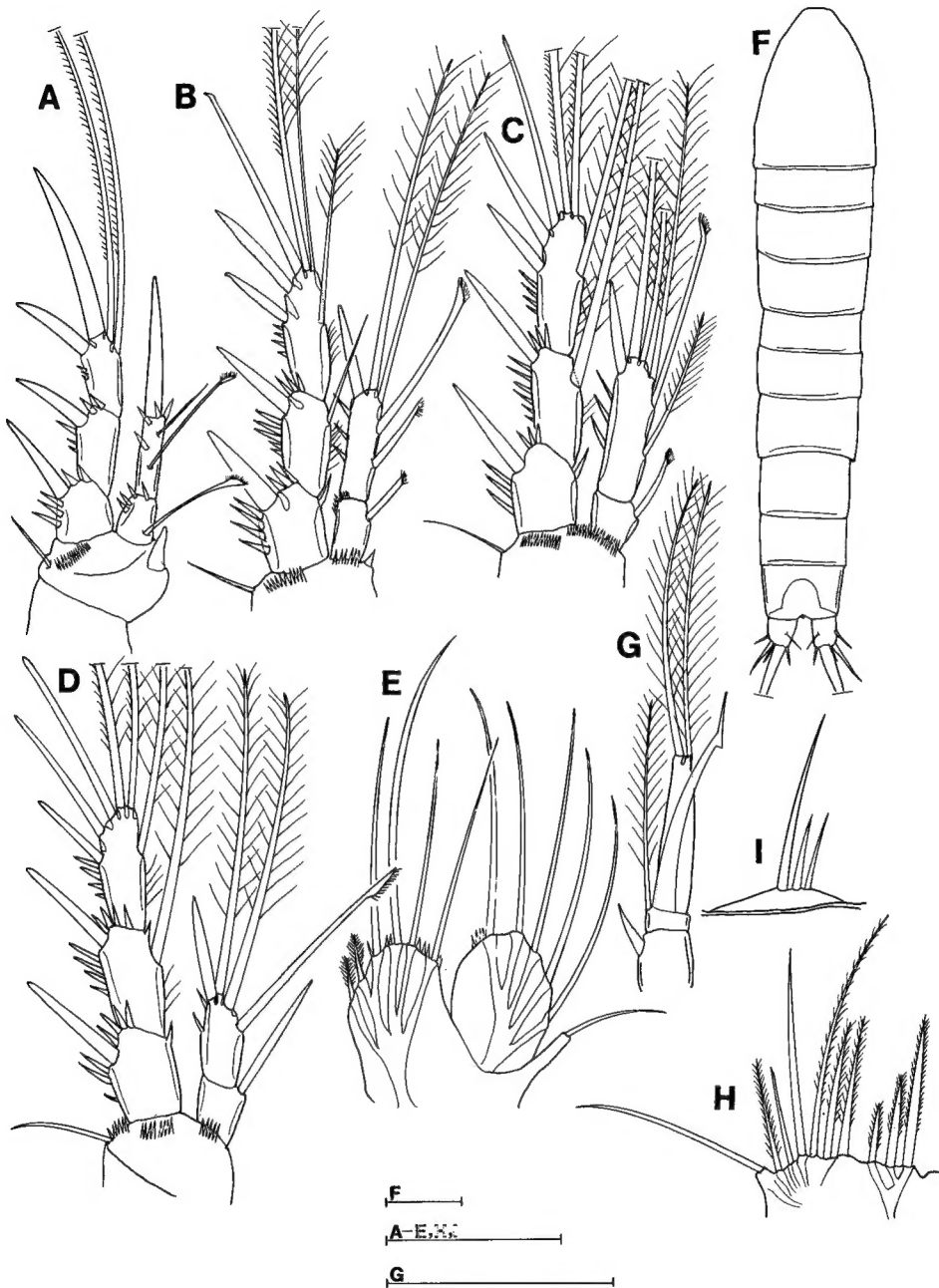


Fig. 2. *Lourinia armata* (Claus), female: A, leg 1; B, leg 2; C, leg 3; D, leg 4; E, leg 5. male: F, habitus, dorsal; G, endopod of leg 3; H, leg 5; I, leg 6 (Scale bars represent 0.1 mm).

leg 3 modified (Fig. 2G). One of outer lateral marginal seta not depressed. Exopod and basoendopod of leg 5 (Fig. 2H) fused. Legs of both sides also fused. Setae correspond with canaliculated system in the legs same as in female. Leg 6 (Fig. 2I) with 3 naked setae.

Remarks. Vervoort (1964) claimed that the variability in *Lourinia armata* (especially in the structure

of the furcal setae and leg 5), is fairly wide. The specimens examined in his study have different setal formula and the morphology of furcal setation from those of the present specimens. Especially, one of the furcal setae being depressed dorso-ventrally is different from the descriptions of other authors (Vervoort, 1964; Petkovski, 1955) except for Nicholls (1941). Sewell's forms are not significant, since the differences between the forms, *major* and *minor* are based on only body lengths. It seems to be that Jakobi missed to count correct number of setae and spines of legs of *L. armata sulamericana*. His descriptions are not agree with his figures. *Lourinia armata* is seemed to be a polytypic species which has variable characters. Since other characters agree well with previous descriptions, it is obvious that specimens we examined are *Lourinia armata*. It will be determined the relationship between other forms and these Korean specimens in further studies.

Distribution. Till now, the geographical distribution of *Lourinia armata* is restricted to the tropical and subtropical Atlantic and Indian ocean and the western Pacific. *L. armata* was distributed at Namae, the east coast off Korean peninsula and Cheju harbor in Cheju Island. Our report on the occurrence of this species is for the first time in the far east Asian coasts.

ABSTRACT

Only 12 species of marine harpacticoid copepods are recorded in Korean waters. With the study on the taxonomy of harpacticoid copepods in Korean waters, *Lourinia armata* (Claus, 1866) was found in the samples from the rocky shore of Namae off the east coast and Cheju Harbor in June and August 1992, respectively. This species is reported to be distributed in the far east Asian coasts for the first time. It was redescribed and figured.

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RECEIVED: 3 September 1993

ACCEPTED: 1 October 1993